

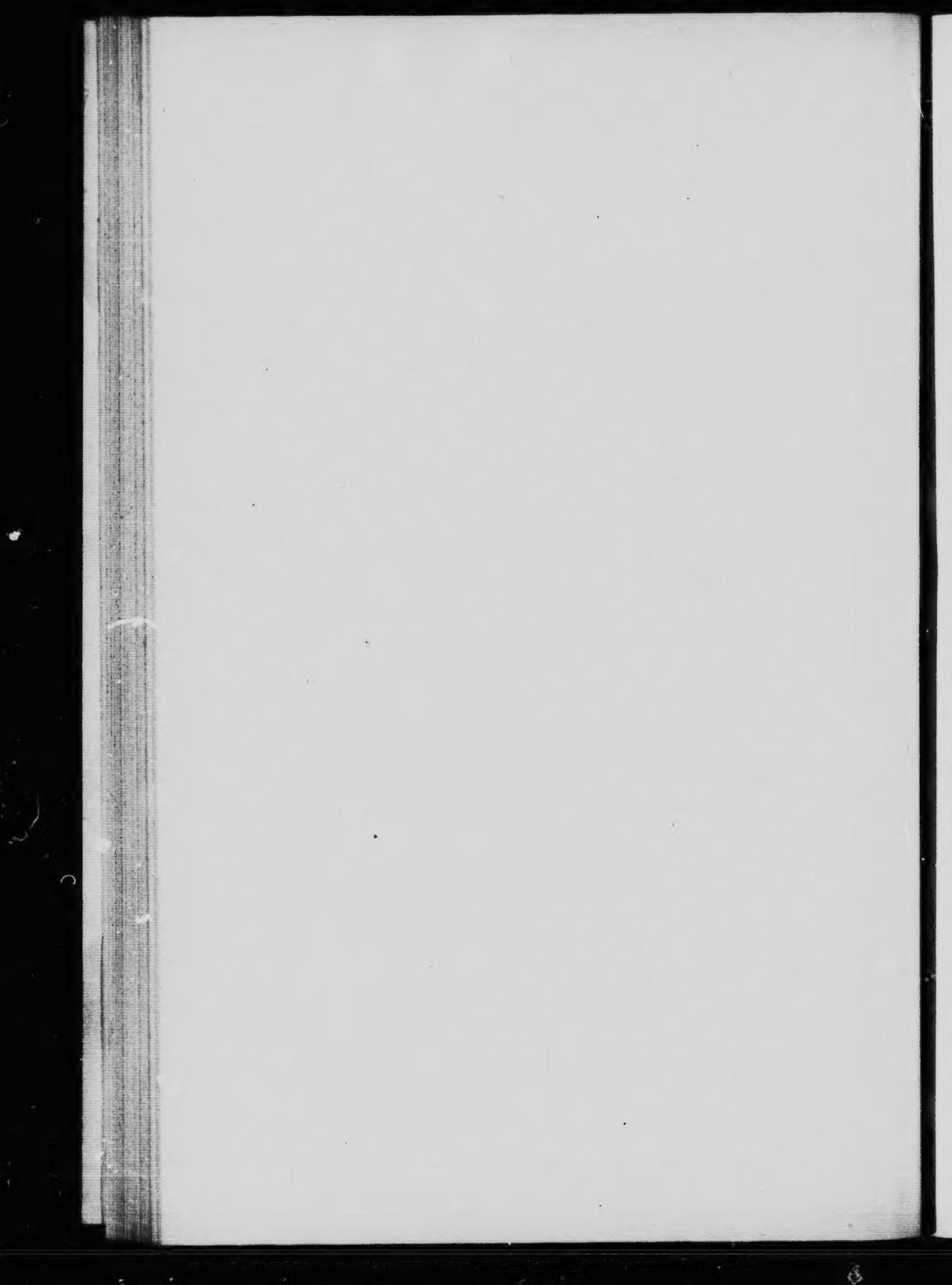
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LABORATORY

OF THE

INLAND REVENUE DEPARTMENT

OTTAWA, CANADA.

BULLETIN No. 331,

TURPENTINE, AS A PAINT MATERIAL

NOTES AND COMMENTS.

Under this heading, as occasion arises, the Bulletins issued by this Department will contain, as an appendix, such comment as may seem necessary or advisable upon matters relating to the work of the Department in connection with the administration of the Adulteration Act, the Fertilizers Act, the Feeding Stuffs Act or the Proprietary Medicines Act.

It frequently happens that correspondents ask information regarding the above Acts, of such a nature that the matter in question possesses general interest, and comment upon it would prove acceptable and useful to others than the immediate questioner. In such cases the reply may find a place in these columns. For convenience of reference these notes will be numbered in series.

LABORATORY
OF THE
INLAND REVENUE DEPARTMENT
OTTAWA, CANADA.

BULLETIN No. 331

Turpentine, as a Paint Material

OTTAWA, January 8, 1916.

J. U. VINCENT, Esq.,
Deputy Minister of Inland Revenue,

SIR.—By an Order in Council of June 6, 1912, Turpentine for uses in the Arts, was defined as follows:—

PRIVY COUNCIL, CANADA.

AT THE GOVERNMENT HOUSE, OTTAWA.

THURSDAY, the 6th day of June, 1912.

PRESENT

HIS ROYAL HIGHNESS THE GOVERNOR GENERAL IN COUNCIL:

His Royal Highness the Governor General in Council, in virtue of the provisions of Section 27 of Chapter 133, Revised Statutes of Canada, 1906, "An Act respecting the Adulteration of Food and other Articles," is pleased to order as follows:—

Turpentine is hereby added to Schedule 4 of the above described Act and the definition thereof shall be as hereinafter set forth:—

STANDARDS FOR TURPENTINE:

I. When turpentine is sold as a drug, for medicinal purposes or to the order of a physician, it shall meet pharmacopoeal requirements as provided by section 7 of the said Act.

II. When turpentine is sold under any other conditions than for purposes of medicine, as above, it shall meet the following requirements:—

- (1) It shall be entirely free from mineral oil.
- (2) Unless sold as wood turpentine, it shall absorb not less than 340 times its weight of iodine (Hubl Solution and Method). If sold as wood turpentine it shall absorb not less than 240 times its weight of iodine by same method.
- (3) The undissolved (unpolymerized) residue on treatment of 10cc with 40cc of a sulphuric acid containing 20 per cent of the fuming acid, shall not exceed 10 per cent by volume of the sample.
- (4) The refractive index of this residue shall be not less than 1.4950 at 20°C.
- (5) The refractive index of the sample at 20°C. shall lie between 1.4680 and 1.4730.
- (6) The specific gravity of the sample at 20°C. shall not be less than 0.860.
- (7) The initial boiling point shall not be lower than 150°C. under ordinary atmospheric pressure.
- (8) At least 75 per cent by volume shall distil below 160°C.
- (9) The residue on evaporation over a steam bath shall not exceed two (2) per cent.

RODOLPHE BOUDREAU,
Clerk of the Privy Council.

No systematic inspection of the article, as thus defined, has been made since the date of the Order in Council as above. An extensive study of the subject was made in 1910, and the results are published in Bulletin No. 211. At that time the only legal standards existent had regard to turpentine (Oil of Turpentine) as a drug; and although many of the samples then reported failed to meet the requirements as given in the British Pharmacopoeia, it was considered inadvisable to apply these very stringent constants to turpentine sold for purposes other than medicinal.

The present inspection embraces careful and, in most cases exhaustive work upon two hundred and twelve (212) samples which were purchased throughout the Dominion in July, August and September of last year; and were specially obtained from dealers in paint materials. They are therefore to be judged by the standards fixed for turpentine supplied for other uses than as a drug. Fifty (50) of these samples fail to meet the above requirements and must be described as adulterated under the Act. (See note on page 5.)

A very large number of complaints from users of turpentine have been received in recent years; and the results of this inspection indicate that ample ground for complaint exists. The chief adulterant is found to be a petroleum product; but rosin oil is also used for the purpose.

Wood turpentine, that is the product obtained by distillation from resinous woods, as distinguished from that obtained in the regular way from the gum of various species of pine, cannot be regarded as an adulteration, provided that it is properly described when offered for sale. It possesses in a high degree, the desirable properties of true turpentine, but is not, in every respect, its equal for paint purposes. Samples indicat-

ing (by their lower iodine number, and other characters) admixture with wood turpentine, have not been judged as adulterated in this report. It must be noted, however, that vendors are not as careful as they should be in properly distinguishing these articles from true (gum) turpentine.

I would respectfully recommend publication of this report as Bulletin No. 331.

I have the honour to be, Sir,
Your obedient servant,

A. McGILL,
Chief Analyst.

OTTAWA, March 22, 1916.

NOTE.—The term adulteration, as used here, must be understood to mean that the sample does not meet the standards for turpentine fixed by Order in Council of June 6, 1912.

Section 21 of the Adulteration Act, as this appears in the Revised Statutes of 1906, has been introduced into this Act from an older Act of 1894, entitled "An Act in restraint of Fraudulent Sale or Marking."

Section 21, is as follows:—

"No person shall mark, brand or label any article or any package containing any article mentioned in the first column of the fourth schedule to this Act, with the word Pure, Genuine, or any word equivalent thereto, or sell, or offer or expose for sale, any such article or package so marked, branded, stamped or labelled, unless such article or the contents of such package are pure within the meaning of the second column of the said schedule."

It will be noted that, unless the article has been sold as *Pure* or *Genuine*, the penalties imposed by Section 33 (Section 3 of the Act in restraint of Fraudulent Marking) do not apply.

The samples of turpentine herein reported were simply sold as turpentine, and not as pure turpentine or genuine turpentine. It is reasonable to interpret the word turpentine, used simply, as meaning pure or genuine turpentine; but the technical difficulty introduced by the peculiar wording of section 21, makes procedure uncertain, and perhaps unadvisable until such time as an amendment of the Act is secured.

BULLETIN No. 331—TURPENTINE.

Date of Collection.	No. of Sample.	Nature of Sample.	Name and Address of Vendor.	Name and Address of Manufacturer or Fumisher as given by the Vendor.		Furnisher.	(Is not an expression of opinion.)
				Cost.	Quantity.		
1915.							
Sept. 28	64256	Wm. Stairs Son & Morrow.	1 pt.	15	Unknown	Carrito, Patterson Co., Halifax.	
		Halifax.				J. C. Calder, Agent, Halifax.	
" 28	64257	Wm. Robertson & Son, Halifax.	1 pt.	15	Georgia Turpentine Co.	Mr.	
" 28	64258	A. M. Bell & Co., Halifax	1 pt.	15	"	Montreal.	
" 28	64259	Jas. Simmonds, Ltd., Halifax	1 pt.	15	"	J. C. Calder, Agent, Halifax.	
" 28	64260	Geo. E. Smith & Co., Halifax	1 pt.	15	Unknown	"	

DISTRICT OF NOVA SCOTIA—R. J. WAUGH, INSPECTOR.

1915.							
Aug. 13	69811	J. S. Fraser, New Glasgow	3 pts	45	Unknown	De R. Carrite, St. John	
" 13	69812	Thompson & Sutherland, New Glasgow	3 "	38	Imperial Oil Co., Halifax	Mfr.	
" 13	69813	Bent & Cahoon, New Glasgow	3 "	37	Unknown	De R. Carrite, St. John	

DISTRICT OF NOVA SCOTIA—W. A. PETIPAS, TEMPORARY INSPECTOR.

DISTRICT OF CAPE BRETON—E. F. McKEEN, INSPECTOR.

July 27	Turpentine..	6814	C. P. Moore, Sydney.....	3 pts.	45	Georgia Turpentine Co., Montreal.
" 27	" "	68916	Thompson Sutherland Co., Sydney.....	3 pts.	45	Imperial Oil Co.

DISTRICT OF PRINCE EDWARD ISLAND—WM. A. WEEKS, INSPECTOR.

July 15	Turpentine..	60335	Prowse & Son, Murray Harbour, P.E.I.	3 pts.	35	Rogers Hardware Co., Charlottetown.
" 17	" "	60364	S. W. Crabbe, Charlottetown, P.E.I.	3 "	30	Imperial Oil Co., Halifax.
" 17	" "	60365	Fennell & Chandler, Charlottetown, P.E.I.	3 "	35	DeB. Carrite, St. John.
" 19	" "	60366	Rogers Hardware, Yds., Charlottetown, P.E.I.	3 "	35	"
" 19	" "	60367	P. J. Berry, Dunedem, Lot 31, P.E.I.	3 "	35	Rogers Hardware Co., Charlottetown.
" 23	" "	60368	Russell Con, Morell, P.E.I., P.E.I.	3 "	35	Can. Paint Co., Montreal.
" 23	" "	60369	H. Con. Morell, P.E.I., P.E.I.	3 "	35	Rogers Hardware Co., Charlottetown.
" 24	" "	60370	Mathew, McLean, 12, St. John, P.E.I.	3 "	35	Unknown
" 24	" "	60371	J. J. Hughes, Co., Ltd., Souris, P.E.I.	3 "	35	A. M. Bell & Co., Halifax
" 26	" "	60372	D. F. Keays, Bayfield, P.E.I., P.E.I.	3 "	45	Stern Bros., Ltd., Souris, P.E.I.

DISTRICT OF NEW BRUNSWICK—JOHN C. FERGUSON, INSPECTOR.

July 16	Turpentine.	60151	Net. Drug & Chem. Co., St. John.	3 pts.	60	Prov. Chem. Fert. Co., St. John.
Aug. 2	" "	60152	Robertson, Foster & Smith, St. John.	3 "	40	DeB. Carrite, St. John.
" 3	" "	60153	F. A. Young, St. John.	3 "	40	Imperial Oil Co., St. John.
" 3	" "	60154	T. McArdy & Sons, St. John.	3 "	40	DeB. Carrite.
" 4	" "	60155	W. H. Thorne & Co., Ltd., St. John.	3 "	45	"
" 4	" "	60156	H. L. & J. T. McIowan, St. John.	3 "	40	Wood Bros., Ltd., St. John.
" 11	" "	60157	The DeWolf Hardware Co., St. Stephen.	3 "	45	DeB. Carrite, St. John.

BULLETIN No. 331—TURPENTINE.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.	Name and Address of Manufacturer or Furnisher as given by the Vendor.		Inspector's Report. (is not an expression of opinion.)
					Quantity.	Cost.	
1915.	17 Turpentine.	66158	R. Chestnut & Son, Fredericton	3 pts.	45	.....	Apothecary Hall Co., Waterbury, Conn. U.S.A.
"	24 "	66159	Sussex Mercantile Co., Sussex.	3 "	45	.....	Imperial Oil Co., St. John
"	26 "	66160	Summer & Co., Moncton.	3 "	30	.....	DeB. Carrite, St. John.

DISTRICT OF NEW BRUNSWICK—JOHN C. FERGUSON, INSPECTOR.—Concluded.

1915.	7 Terrebonne.	3608	Dorchester Lumber, Ste. Ma.	3 pts.	21	Brit. Amer. Oil.....	.....
"	12 "	3610	J. L. Audet, St. Edward.	3 "	25	Dorchester Lumber, St. Malachie.	.....
"	13 "	3615	J. A. Cloutier, St. Odilon.	3 "	25	Herman Young, Quebec.	.....
"	16 "	3624	P. K. Prevost, Ste. Rose.	3 "	15	"	.....
"	17 "	3627	Gariepie, St. Prosper.	3 "	25	Fratingham, Montreal.	.....
"	20 "	3581	Antoine Picard, St. Raphael.	1 pt.	20	Herman Young, Quebec.	.....
"	20 "	3588	Antoine Labroque, St. Raphael.	1 "	25	"	.....
"	20 "	3593	L. A. Roy, St. Valier.	1 "	25	Jos. Lemieux, Quebec.	.....

DISTRICT OF QUEBEC PROVINCE—J. AUDET, O. BROchu, N. CADIEUX AND S. GENDREAU, TEMPORARY INSPECTORS.

July	7	Terrebonne.	3608	Dorchester Lumber, Ste. Ma.	3 pts.	21	Brit. Amer. Oil.....	.....
"	12	"	3610	J. L. Audet, St. Edward.	3 "	25	Dorchester Lumber, St. Malachie.	.....
"	13	"	3615	J. A. Cloutier, St. Odilon.	3 "	25	Herman Young, Quebec.	.....
"	16	"	3624	P. K. Prevost, Ste. Rose.	3 "	15	"	.....
"	17	"	3627	Gariepie, St. Prosper.	3 "	25	Fratingham, Montreal.	.....
"	20	"	3581	Antoine Picard, St. Raphael.	1 pt.	20	Herman Young, Quebec.	.....
"	20	"	3588	Antoine Labroque, St. Raphael.	1 "	25	"	.....
"	20	"	3593	L. A. Roy, St. Valier.	1 "	25	Jos. Lemieux, Quebec.	.....

BULLETIN No. 331—TURPENTINE.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Name and Address of Manufacturer or Furnisher as given by the Vendor.	Furnisher.
				Quantity.	Cent.		
Inspectors' Report. (Is not an expression of opinion.)							

DISTRICT OF THREE RIVERS—DR. V. P. LAVALLÉE, INSPECTOR.

1915	July 8	Turpentine.	69124 S. Costello, Joliette.	3 Pts.	35	R. L. Jamieson, Montreal.	.....
"	7	"	69125 Edm. Wodon, Joliette.	3 "	38	Ramsey Sons, Ltd., Montreal.	.....
"	9	"	69126 Monahan Bros., St. Lin.	3 "	49	Imperial Oil Co., Montreal.	.....
"	9	"	69127 Alfred Henri, St. Lin.	3 "	46	Can. Paint Co., Montreal.	.....
"	10	"	69128 R. Charbonneau, St. Esprit.	3 "	45	"	.....
"	10	"	69129 George Beaudoin, St. Esprit.	3 "	45	Can. Paint Co., Montreal.	.....
"	9	"	69130 W. Gendreau, St. Roch Achigan.	3 "	40	Couillard Auguste, Montreal.	.....
"	12	"	69131 L. Provost, L'Ephrénie.	3 "	30	Ramsay's Sons, Montreal.	.....
"	12	"	69132 T. A. Merier, L'Ephrénie.	3 "	40	L. H. Hebert, Montreal.	.....
"	13	"	69133 L. Pauzi, L'Assomption.	3 "	60	Can. Paint Co., Montreal.	Bédard & Cie, L'Assomption.
Aug. 7	"		69134 S. Costello, Joliette.	3 "	38	R. E. Jamieson, Montreal.	.....

DISTRICT OF EASTERN TOWNSHIPS. J. J. COSTIGAN, ACTING INSPECTOR.

9 Aug.	11	Turpentine..	Gatineau, Bourque, Sherbrooke,.....	3 Pts. 35	35	35	Sold as Georgia Turpentine.....
12	11	"	63061 N. Labrecque, Sherbrooke,.....	3 "	40	40	Brit. Amer. Oil Co., Ltd.....
12	11	"	63062 J. Jos. Lacombe & File, Sherbrooke 3 "	40	40	40	Brit. Amer. Oil Co., Ltd.....
12	17	"	63063 Phoenix & Girard, Grubu,.....	3 "	25	25	Standard Oil Corporation.....
12	11	"	63064 Codette & Fils, Inc., Sherbrooke,.....	3 "	45	45	Standard Oil Corporation.....
12	12	"	63065 J. R. Dionne, Coaticook,.....	3 "	40	40	Brit. Amer. Oil Co., Ltd.....
12	12	"	63066 A. Seguin, St. Hyacinthe,.....	3 "	38	38	Brit. Amer. Oil Co., Ltd.....
13	12	"	63067 Beaumoyer & Laline, St. Hyacinthe,.....	3 "	38	38	Can. Paint Co., Ltd.....
13	13	"	63068 J. R. St. Pierre, St. Hyacinthe,.....	3 "	37	37	Imperial Oil Co.....
13	13	"	63069 Gendron & Lemay, St. Hyacinthe 3 "	45	45	45	Can. Paint Co.....

DISTRICT OF MONTREAL—D. J. KEARNEY, INSPECTOR.

Aug.	4	Turpentine..	67456 The People's Hardware Co., 1523 St. Lawrence Boul., Montreal.	1523 Pts	46	Unknown.....	
"	4	"	67457 Bernier Hardware Co., 126 St. Lawrence Boul., Montreal.	3 "	45	Imperial Oil Co.....	
"	16	"	67458 A. Brunillet, 1390 St. Lawrence.....	3 "	38	Can. Paint Co.....	
"	16	"	67459 O. Rollin, & Co., 1324 St. Lawrence Boul., Montreal.	3 "	37	Brit. Amer. Oil Co.	
"	16	"	67460 Beaussais Freres, 336 St. Law-.....	3 "	46	Imperial Oil Co.	
"	23	"	67461 A. Griffon, 253 St. Paul st. E., Montreal.	3 "	30	Georgia Turpentine Co.	
"	23	"	67462 J. O. Dean, 259 St. Paul st. E., Montreal.	3 "	30	McArthur Irwin Co.	
"	24	"	67463 Lefevre & Lalonde, 187 Church ave., Verdun,.....	3 "	40	Mount Royal Colour & Varnish Co.	
"	24	"	67464 The Raymond Hardware, Ltd., 343 Notre Dame st. W., Montreal.	3 "	37	Georgia Turpentine Co.	
"	24	"	67465 L. Lafleur, Ltd., 366 Notre Dame st. W., Montreal.	3 "	37	"	

BULLETIN No. 331—TURPENTINE.

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				Quantity.	Centre.		
1915.	July 22 Turpentine.	57991	L. P. Beaulne, Hawkesbury.	3 pts.	35	Can. Paint Co.	
"	"	57992	J. G. Higgins, Hawkesbury.	3 "	25	Imperial Oil Co.	
"	"	57993	J. O. Phoenix, Hawkesbury.	3 "	45	Can. Paint Co.	
"	"	57994	A. Morand, Valleyfield.	3 "	45	"	
"	"	57995	V. Leger, Valleyfield.	3 "	35		
"	"	57996	Beaure & Châle, Valleyfield.	3 "	36		
"	"	57997	N. Langevin, Valleyfield	3 "	35		
"	"	57998	A. Lebeuf, Valleyfield.	3 "	40		
"	"	57999	Côte & Cie, St. Johns.	3 "	30	McArthur Irwin, Montreal	
"	"	58000	C. O. Gervais & Fils, St. Johns.	3 "	35		

DISTRICT OF VALLEYFIELD—J. J. COSTIGAN, ACTING INSPECTOR.

DISTRICT OF OTTAWA J. A. RICKETY, INSPECTOR.

							Manufacturer.
July 16	Turpentine	51633	E. J. McIarry, Renfrew	3	ps.	35	Ottawa Paint Works,
"	"	51633	Devine & Laggue, Renfrew	3	"	45	R. C. Jamieson Co., Montreal.
16	"	51635	French & Co., Renfrew	3	"	45	Can. Paint Co., Montreal.
"	"	51635	The Jennings Co., Renfrew	3	"	40	Can. Oil Co., Toronto.
16	"	51637	A. G. Dohbie & Co., Rockville	3	"	40	Georgia Turpentine Co., Montreal.
"	"	51637	B. D. Steacy, Brockville	3	"	45	Can. Paint Co., Montreal.
17	"	51639	Dunleau & Co., Ltd., Pembroke	3	"	45	E. Fielding & Son, Toronto.
"	"	68680	Griffin & Brennan, Arnprior	3	"	37	Ottawa Paint Works, Ottawa.
10	"	68680	John S. Moir, Arnprior	3	"	35	Can. Paint Co., Montreal.
"	"	68690	W. J. Muirhead, Carleton Place	3	"	35	Ottawa Paint Works, Ottawa.
13	"	68692	Taylor Bros., Carleton Place	3	"	40	Can. Paint Co., Montreal.
"	"	68693	B. H. Smart, Brockville	3	"	30	Midland, Toronto.
17	"	68693	"	3	"	30	"

DISTRICT OF KINGSTON—JAMES HOGAN, INSPECTOR.

July 24	Turpentine	70231	Savage & Wightman, Kingston	3	pts	18	Sanitarian & Percy Co., Toronto.
"	"	70232	Robinson Bros., Kingston	3	"	27	J. H. Marvin, Toronto.
"	"	70233	A. Chown & Co., Kingston	3	"	15	Mixture of two kinds...
"	"	70234	John Laird & Sons, Kingston	3	"	20	Dalton & Son, Kingston.
"	"	70235	W. J. Vines, Kingston	3	"	20	H. W. Marshall, Kingston.
"	"	70236	H. W. Marshall, Kingston	3	"	45	Georgia Turpentine Co., Montreal.
"	"	70237	J. B. Bunt & Co., Kingston	3	"	35	Dalton & Son, " piston.
"	"	70238	W. A. Mitchell, Kingston	3	"	30	"
"	"	70239	H. & Nicoll, Kingston	3	"	45	J. A. Casey Co., New York.
"	"	70240	Atvey & Birch, Kingston	3	"	20	Oil & Rawson Co., Savanna, Ga.

BULLETIN No. 331—TURPENTINE

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Name and Address of Manufacturer or Furnisher as given by the Vendor.		Inspector's Report. (Is not an expression of opinion.)
				Co.t.	Quantity. Ounces.	
1915.	Aug. 8	Turpentine.	70074 W. A. Stephenson, 28 Vaughan Rd., Toronto.	3 bots.	25	Unknown
" 10	"	70075 R. H. Hudson, 1199 St. Clair, 3 Ave. Toronto.	Toms Bros., 1612 Danforth Ave., 3 Toronto.	3	25	Can. Oils, Ltd., Toronto.
" 11	"	70076 H. Hallet & Johnson, 1623 Dundas St. W. Toronto.	Nodion, H. Hallet & Johnson, 1623 Dundas St. W. Toronto.	3	25	Ottawa Paint Co., Toronto.
" 15	"	70078 James Hugill, Weston.	James Hugill, Weston.	3	30	Reynolds & Co., Toronto.
" 14	"	70079 E. W. Chard, 324 College St., Toronto.	E. W. Chard, 324 College St., 3 Toronto.	3	35	Ghiden Varnish Co., Toronto.
" 16	"	70080 T. H. Boyd, 2252 Queen St. E., 3 Toronto.	T. H. Boyd, 2252 Queen St. E., 3 Toronto.	3	30	Sherwin Williams Co., Ltd., Toronto.
" 17	"	70081 C. G. Bailey, 1918 Queen St. E., 3 Toronto.	C. G. Bailey, 1918 Queen St. E., 3 Toronto.	3	25	Royal Commission, Toronto.
" 15	"	70082 H. W. Wall, 305 Roncesville Ave., 3 Toronto.	H. W. Wall, 305 Roncesville Ave., 3 Toronto.	3	25	Imperial Oil Co., Ltd., Toronto.
" 20	"	70083 J. W. Peacock, 1026 Queen St. W., Toronto.	J. W. Peacock, 1026 Queen St. W., Toronto.	3	25	Turpentine Producers, Ltd., Toronto.

DISTRICT OF TORONTO—H. J. DAGER, INSPECTOR.

DISTRICT OF HAMILTON H. J. DAKER, ACTING INSPECTOR.

July 21	Turpentine..	70041 C. Chapman, 208 St. Paul St., St. Catharines.	3 pts.	40	Arthur Irwin Co., Montreal.
" 21	"	70042 W. R. McKenzie & Co., Niagara on-the-Lake.	3 "	60	Pinchen & Johnson Co., Ltd., Toronto.
" 22	"	70043 L. I. Hunt & Son, Thorold.	3 "	35	Ensign Commission Co., Toronto.
" 23	"	70044 G. H. Clark, 54 Erie Ave., Niagara Falls.	3 bots.	30	Can. Paint Co., Ltd., Toronto.
" 24	"	70045 McEvers & Henry, 485 Victoria Ave., Niagara Falls.	3 "	25	Unknown
" 25	"	70046 Pringle & Son, Nobleton.	3 pts.	45	Brit. Amer. Oil Co., Toronto.
" 26	"	70047 W. B. Gardner & Sons, Bolton.	3 bots.	35	Imperial Oil Co., Toronto.
Aug. 3	"	70048 W. E. Anthony, Brantford.	3 "	60	Sanderson, Percy Co., Ltd., Toronto.
" 4	"	70049 J. W. Kennedy, Georgetown	3 "	35	Unknown
" 5	"	70050 Arcade, Ltd., 45 James St., N., Hamilton.	3 "	36	Wood, Valance Co., Ltd., Hamilton.

DISTRICT OF WINSTON-JOHN TALBOT, INSPECTOR.

Aug. 9	Turpentine.	54644 Odell & Mitchell, London.	3 bus.	20	West, Rosin & Turpentine Co., Detroit.
" 9	"	54646 Love Hardware Co.	3 "	25	"
" 9	"	54648 J. G. Steele & Co., London	3 "	25	Howden Hardware Co., London.
" 10	"	54650 A. Westman, London.	3 "	25	Taylor & Lowenstein & Co., Mohawk, Alta.
" 10	"	54652 Kilpatrick Bros., London.	3 "	20	Howden Hardware Co., London.
" 10	"	54654 F. E. Jones, London.	3 "	10	West, Rosin & Turpentine Co., Detroit.
" 12	"	54657 Fred N. Karr, Woodstock.	3 "	20	"
" 12	"	54659 J. N. Smiley, Woodstock.	3 "	20	Howden Hardware Co., London.
" 12	"	54662 Davidson & McInnes, Woodstock.	3 "	25	International Varnish Co., Toronto.
" 13	"	54664 McMurry Hardware, St. Thomas	3 "	12½	West, Rosin & Turpentine Co., Detroit.
" 13	"	54666 Jackson & Firth, St. Thomas	3 "	30	Sherwin-Williams Co., Montreal.
" 13	"	54670 A. R. Campbell, St. Thomas	3 "	17½	Hobbs Hardware Co., London.

BULLETIN No. 331—TURPENTINE.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.	Name and Address of Manufacturer & Furnisher as Given by the Vendor.		Inspector's Report. (It is not an expression of opinion.)
					Manufacturer.	Furnisher.	
1915. Aug. 4	Turpentine.	61323	Walter Johnson, 533 Sherbrook; 3 pds.	60			Miller, Morse, Winnipeg
" 4	"	61326	Andrews & Sons, Victor St., Winipeg	60			Can. Paint Co., Winnipeg
" 4	"	61327	R. Steinman Hardware Co., 5413 Selkirk Ave., Winnipeg	60			Can. Oil Co., Winnipeg
" 4	"	61329	Tulley & Davey, 1722 Main St., Winnipeg	60			
" 5	"	61351	R. Thornton, 262 Tache Ave., Norwood.	45			Wood, Valance Co., Winnipeg
" 5	"	61333	Allaire & Bean, 568 Tache Ave., St. Boniface.	60			G. F. Stephen, Winnipeg
" 7	"	61334	H. R. Wood, Nipinika, Brandon.	60			Snowden Oil Co.
" 9	"	61338	Myers & Williams, 655 10th St., Brandon.	60			Sherwin, Williams, Winnipeg
" 12	"	61339	A. J. Bond & Co., 1763 Portage Ave., St. James	60			Merrick Anderson, Winnipeg
" 12	"	61340	Aikenhead-Clark Hardware Co., 101 Royal Building, Winnipeg.	60			Starke & Co., Winnipeg

DISTRICT OF MANITOBA—J. R. COSGROVE, TEMPORARY INSPECTOR.

1915.	4	Turpentine.	61323	Walter Johnson, 533 Sherbrook; 3 pds.	60		Miller, Morse, Winnipeg
"	4	"	61326	Andrews & Sons, Victor St., Winipeg	60		Can. Paint Co., Winnipeg
"	4	"	61327	R. Steinman Hardware Co., 5413 Selkirk Ave., Winnipeg	60		Can. Oil Co., Winnipeg
"	4	"	61329	Tulley & Davey, 1722 Main St., Winnipeg	60		
"	5	"	61351	R. Thornton, 262 Tache Ave., Norwood.	45		Wood, Valance Co., Winnipeg
"	5	"	61333	Allaire & Bean, 568 Tache Ave., St. Boniface.	60		G. F. Stephen, Winnipeg
"	7	"	61334	H. R. Wood, Nipinika, Brandon.	60		Snowden Oil Co.
"	9	"	61338	Myers & Williams, 655 10th St., Brandon.	60		Sherwin, Williams, Winnipeg
"	12	"	61339	A. J. Bond & Co., 1763 Portage Ave., St. James	60		Merrick Anderson, Winnipeg
"	12	"	61340	Aikenhead-Clark Hardware Co., 101 Royal Building, Winnipeg.	60		Starke & Co., Winnipeg

DISTRICT OF SASKATCHEWAN HIGH COURT JURISDICTION

July	19	Turpentine.	66334	C. T. Laird, Regina.....	3	lbs	60		Unknown.....
"	19	"	66335	Regina Trading Co., Regina.....	3	"	60		Continental Oil Co.....
"	19	"	66336	Armstrong Saythe & Dowswell, Regina.....	3	"	60		Winnipeg Oil Co., Regina.....
"	20	"	66337	John Grobel, Melville.....	3	"	60		Winnipeg Oil Co., Melville.....
"	20	"	66440	E. Smith, Melville.....	3	"	60		"
"	20	"	66442	Wm. Anderson, Melville.....	3	"	40		Sherwin Williams Co., Win-
"	21	"	66410	Chas. Beck, Yorkton.....	3	"	50		nipeg.....
"	21	"	66412	D. A. Sands, Yorkton.....	3	"	75		Winnipeg Oil Co., Yorkton.....
"	22	"	66416	Ishbister & Pretty, Saskatoon.....	3	"	60		G. F. Stephens & Co., Win-
"	23	"	66418	Fawcett Hardware Co., Saskato-	3	"	40		nipeg.....
				on.					Prairie City Oil Co., Saska-
				ton.					ton.

DISTRICT OF ALBERTA - A. W. R. MARKLEY, INSPECTOR

Aug. 10	Turpentine..	52246 Northern Hardware Co., Edmonton.	3 lbs.	45 Brit. Amer. Paint Co., Edmonton.
"	"	52247 Chown Hardware Co., Edmonton.	3 "	60 (i. F. Stephens Co., Winnipeg.
10	"	52248 J. A. Werner, Edmonton.....	3 "	60 Brit. Amer. Paint Co., Edmonton.
"	"	52249 Stonerill's Hardware Co., Edmonton.	3 "	60 Marshall Wells Alberta Co., Edmonton.
10	"	52250 Gies. D. Wallace, Ltd., Wetaskiwin.	3 "	50 (i. F. Stephens Winnipeg.
12	"	52251 Morrison & Johnstone, Ltd., La-	3 "	45 Marshall Wells Winnipeg.
"	"	cunie.	"	"
13	"	52252 A. M. Campbell, Lacombe.....	3 "	40 (i. F. Stephens Co., Winnipeg.
"	"	52253 J. H. Ashdown Hardware Co., Calgary.	3 "	30 Prairie City Oil Co., Winnipeg.
20	"	52254 Marshall Hardware, Ltd., Cal-	3 "	60 Colgate Paint & Glass Co.,
"	"	gary.	"	"
20	"	52255 Hall Hardware Co., Calgary.....	3 "	25 Brit. Amer. Paint Co., Cal-
				gary.

BULLETIN No. 331—TURPENTINE.

Date of Collection.	Nature of Sample.	No. of Sample.	Name and Address of Vendor.	Cost.		Manufacturer.	Furnisher.	Name and Address of Manufacturer or Furnisher as given by the Vendor.	Inspector's Report. (Is not an expression of opinion.)
				Cents.	cents.				
1916.									
July 29	Turpentine	61847	F. Wilmes, Trail	3	60	Sherwin Williams Co., Montreal.			
" 20 "		61854	Hunter Bros., Rossland	3	40	Jones & Billingham, Spokane.			
Aug. 6	"	61865	W. R. Megaw, Vernon	3	50	McLennan & McFeeley, Vancouver.			
" 6 "		61867	Vernon Hardware Co., Vernon	3	60	Wood, Vallance & Legatt, Vancouver.			
" 10 "		61872	Wilcox Hall Co., Kamloops	3	50	McLennan & McFeeley, Vancouver.			
" 10 "		61875	Marlatt & McKenzie, Kamloops	3	50	Imperial Oil Co., Vancouver.			
" 10 "		61876	N. S. Dagleish, Kamloops	3	50	"			
" 16 "		61892	Merritt Mercantile Co., Merritt	3	65	Johnson Paint & Varnish Co., Vancouver.			
" 16 "		61893	Armstrong's Departmental Stores	3	50	Cunningham Hardware, New Westminster.			
" 16 "		61895	A. Jackson, Merritt	3	60	Imperial Oil Co., Vancouver.			

DISTRICT OF ROCKY MOUNTAINS—THOS. PARKER, INSPECTOR.

1916.									
July 29	Turpentine	61847	F. Wilmes, Trail	3	60	Sherwin Williams Co., Montreal.			
" 20 "		61854	Hunter Bros., Rossland	3	40	Jones & Billingham, Spokane.			
Aug. 6	"	61865	W. R. Megaw, Vernon	3	50	McLennan & McFeeley, Vancouver.			
" 6 "		61867	Vernon Hardware Co., Vernon	3	60	Wood, Vallance & Legatt, Vancouver.			
" 10 "		61872	Wilcox Hall Co., Kamloops	3	50	McLennan & McFeeley, Vancouver.			
" 10 "		61875	Marlatt & McKenzie, Kamloops	3	50	Imperial Oil Co., Vancouver.			
" 10 "		61876	N. S. Dagleish, Kamloops	3	50	"			
" 16 "		61892	Merritt Mercantile Co., Merritt	3	65	Johnson Paint & Varnish Co., Vancouver.			
" 16 "		61893	Armstrong's Departmental Stores	3	50	Cunningham Hardware, New Westminster.			
" 16 "		61895	A. Jackson, Merritt	3	60	Imperial Oil Co., Vancouver.			

DISTRICT OF VICTORIA F. J. MORGAN, INSPECTOR

July 28	Turpentine	55348	W. C. Stearnan, 613 Granville St., Vancouver.	3 lbs.	60	Imperial Oil Co., Vancouver.
" 28	"	55349	Hunter Henderson Paint Co., 6423 Granville St., Vancouver.	"	60	British American Paint Co., Victoria.
" 29	"	55350	R. Berg & Co., Ltd., 1673 Pender St., W., Vancouver.	"	50	A. Ramsay & Son, Montreal.
" 29	"	55351	Imperial Varnish & Colour Co., 43 Pender St., W., Vancouver.	"	60	Crown Paint Co., Vancouver.
" 29	"	55352	Wood, Wallace & Leggett, Ltd., 8 Cordova St., W., Vancouver.	"	40	Imperial Oil Co., Vancouver.
" 30	"	55353	Gordon Brown & Co., 2021 Granville St., Vancouver.	"	35	R. C. Jamieson & Co., Montreal.
" 30	"	55354	Crown Paint Co., 24 Cordova St., E., Vancouver.	"	50	Texas Turpentine Co., Remig, Texas, U.S.A.
" 31	"	55355	Cunningham Hardware Co., Columbia St., New Westminster.	"	55	Crown Paint Co., Vancouver.
" 31	"	55356	H. T. Kirk, Columbia St., New Westminster.	"	60	McLean & McFeely & Co., Vancouver.
Aug. 2	"	55357	Vancouver Hardware Co., 8193 Granville St., Vancouver.	"	60	A. Ramsay & Son, Montreal.

DISTRICT OF VICTORIA—D. OSULLIVAN, INSPECTOR

Sept. 24	Turpentine	66790	Mellor Bros., Ltd., P.O. Box 3	3 lbs.	60	Imperial Oil Co., Victoria.
" 24	"	66792	The Standard Co., 840 Fort St., Victoria.	"	75	Agent at Seattle.
" 27	"	66793	H. Harkness & Son, 919 Pandora St., Victoria.	"	75	B. A. Paint Co., Victoria.
" 27	"	66795	J. L. Forrester, 1204 Douglas St., Victoria.	"	75	"
" 28	"	66797	P. McChade & Son, 1214 Wharf St., Victoria.	"	56	The Standard Co., Victoria.
" 28	"	66798	E. B. Marvin & Co., 1202 Wharf St., Victoria.	"	75	Imperial Oil Co., Victoria.
" 29	"	66801	Brit. Amer. Paint Co., Laurel Point, Victoria.	"	25	A. Hardacre & Co., New Orleans.
" 29	"	66803	The Melrose Co., Ltd., 6183 Fort St., Victoria.	"	60	Imperial Oil Co., Victoria.

BULLETIN No. 331—TABLE I
RESULTS OF

PART II--TURPENTINE.

ANALYSIS.

20° C. of Fractions Residues.			Volumes Obtained from 100cc.										Remarks and Opinion of the Chief Analyst.				
IV	Residual 10cc.	Residual 2cc.	Under 15° C.			15° to 15°			15° to 15°			15° to 15°			15° to 15°		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	4708	1 4704	1	4738	4	5	6	7	8	9	10	11	12	13	14	15	
1	4708	1 4798	1	4742	3	3	6	7	14	14	14	14	14	14	14	14	14
1	4713	1 4787	1	4741	3	4	7	16	15	15	15	15	15	15	15	15	15
1	4713	1 4787	1	4743	2	4	9	14	14	14	14	14	14	14	14	14	14
1	4713	1 4787	1	4787	3	4	8	13	13	13	13	13	13	13	13	13	13
1	4712	1 4850			3	4	7	7	7	7	7	7	7	7	7	7	7
1	4700	1 4902			3	7	7	10	10	10	10	10	10	10	10	10	10
1	4706	1 4849			4	8	2	2	2	2	2	2	2	2	2	2	2
1	4705	1 4894			4	7	9	9	9	9	9	9	9	9	9	9	9
1	4712	1 4800			3	7	13	14	14	14	14	14	14	14	14	14	14
1	4715	1 4777			1	7	12	12	12	12	12	12	12	12	12	12	12
1	4743	1 5137			2	1	7	9	10	10	10	10	10	10	10	10	10
1	4639	1 4929			1	4841	5	17	47	6	6	3	2	1	1	1	1
1	4692	1 4811			2	11	36	26	9	3	1						
1	4723	1 5090			2	10	74	4	9	13	5	7	5	16			
1	4694	1 4773			2	14	58	9	4	2	1						
1	4700	1 4763			1	10	79										
1	4713	1 4828			1	3	86										
1	4688	1 4782			5	82	3										
1	4703	1 4794			5	84	1										
1	4695	1 4850			5	82	3										
1	4711	1 4794			6	81	3										
1	4702	1 4813			5	79	6										
1	4710	1 4809			7	81	2										
1	4702	1 4781			2	73	15										
1	4728	1 4925			2	71	17										
1	4638	1 4784			1	5	32	23	14	7	6	1	1				
1	4632	1 4780			3	9	50	22	4	1	1	1					
1	4698	1 4902			3	1	7	41	10	10	3	2	1	12			
1	4715	1 49+			2	1	10	14	21	15	3	2	1	21			
1	4730	1 49+			2	7	12	15	10	11	5	6	3	19			
1	4688	1 4804			1	2	22	20	17	8	9	4	7				
1	4728	1 4925			1	74	14	1									
1	4724	1 5044			1	32	42	10	4	1							
1	4758	1 5+			6	36	14	14	6	5	2		1	3			
1	4720	1 4948			9	66	9	4	2								
1	4712	1 4922			12	3	4	11	15	5	4	7	7	12			
1	4730	1 49+			2	2	13	17	15	9	4	4	4	20			

3608 Adulterated. See note on page 5.

3610 " " "

3615 " " "

3624 Adulterated. See note on page 5.

3627 " " "

3584 " " "

3588 " " "

3593 " " "

4401 " " "

4403 " " "

4408 " " "

4410 " " "

4413 " " "

4416 " " "

4423 " " "

299 " " "

300 " " "

311 " " "

313 " " "

322 Adulterated. See note on page 5.

2760 " " "

2771 " " "

2773 " " "

2777 Adulterated. See note on page 5.

2783 " " "

BULLETIN No. 331—TABLE I
RESULTS OF

Name of Inspectoral District.	No. of Sample,	Boiling Point of Fractions from 100cc.										Refractive Index and						
		Sp. gr. at 15.5° C.		Residue 10cc. 40cc.		Ref. Index 20° C. Tur- pentine.		1st, 25cc.		2nd, 25cc.		3rd, 25cc.		I	II	III		
		Ref. Index due.	Acid.	Ref. Index 20° C. Tur- pentine.	Residue	1st, 25cc.	2nd, 25cc.	3rd, 25cc.	Next, 15cc.									
Three Rivers . . .	2789	0	8536	2-72	1	4592	1	4650	147-158	-163	-174	-235	1	4635	1	4658	1	4660
	2792	0	8529	0-64	1	4900	1	4728	85-157	-159	-169	-225	1	4654	1	4698	1	4700
	2794	0	8770	2-48	1	4680	1	4702	100-159	-167	-184	-225	1	4640	1	4666	1	4685
	2797	0	8734	0-60	1	4922	1	4690	95-156	-158	-167	-218	1	4650	1	4682	1	4702
	69124	0	8658	0-48	1	4045	1	4702	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69125	0	8633	0-40	1	5084	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69126	0	8651	0-48	1	5072	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69127	0	8647	0-40	1	5080	1	4702	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69128	0	8670	0-40	1	5068	1	4702	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69129	0	8662	0-56	1	5026	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69130	0	8798	0-64	1	4950	1	4720	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
Eastern Town- ships.	69131	0	8742	0-64	1	5030	1	4726	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69132	0	8650	0-68	1	5042	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	69133	0	8679	0-84	1	4882	1	4694	140-156	-158	-159	-169	1	4650	1	4686	1	4700
	69184	0	8676	0-80	1	4995	1	4710	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63030	0	8799	3-321	4	4665	1	4725	130-169	-183	-210	-247	1	4670	1	4688	1	4700
	63031	0	8559	0-40	1	4635	1	4668	80-164	-169	-190	-238	1	4586	1	4668	1	4686
	63032	0	8483	3-36	1	4580	1	4632	147-150	-161	-163	-179	1	4600	1	4632	1	4648
	63033	0	8652	0-88	1	4922	1	4700	150-155	-155	-155	-159	1	4678	1	4692	1	4700
	63034	0	8666	0-641	1	5020	1	4702	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63035	0	8499	3-36	1	4564	1	4624	130-156	-156	-166	-197	1	4576	1	4620	1	4636
Montreal . . .	63956	0	8488	3-36	1	4796	1	4630	140-159	-161	-164	-195	1	4596	1	4630	1	4644
	63057	0	8635	0-92	1	4952	1	4700	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63058	0	8794	0-56	1	5012	1	4722	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63059	0	8662	0-72	1	5022	1	4712	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67456	0	8664	0-72	1	5008	1	4706	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67457	0	8661	0-76	1	5000	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67458	0	8659	0-92	1	4756	1	4630	93-157	-159	-162	-179	1	4632	1	4665	1	4686
	67459	0	8548	3-52	1	4570	1	4638	120-163	-167	-179	-205	1	4612	1	4632	1	4645
	67460	0	8648	0-88	1	4952	1	4694	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67461	0	8695	3-40	1	4676	1	4704	110-167	-178	-220	-235	1	4668	1	4680	1	4692
Valleyfield . . .	67462	0	8675	0-56	1	5080	1	4712	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67463	0	8680	0-44	1	5086	1	4710	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	67464	0	8614	3-36	1	4684	1	4700	140-164	-175	-220	-235	1	4680	1	4690	1	4698
	67465	0	8618	3-48	1	4635	1	4698	145-168	-178	-215	-247	1	4624	1	4684	1	4686
	57991	0	8890	0-64	1	4975	1	4740	100-158	-160	-170	-225	1	460	1	4690	1	4706
	57992	0	8902	0-56	1	4984	1	4750	100-157	-158	-168	-215	1	4682	1	4692	1	4710
	57993	0	8863	0-48	1	4965	1	4740	100-156	-156	-168	-230	1	4680	1	4696	1	4708
	57994	0	8681	0-88	1	4964	1	4706	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	57995	0	8643	0-72	1	4952	1	4692	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	57996	0	8652	0-76	1	4955	1	4706	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
Ottawa . . .	57997	0	8671	1-00	1	5042	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	57998	0	8744	0-92	1	4872	1	4710	140-157	-157	-164	-210	1	4680	1	4685	1	4692
	57999	0	8648	1-04	1	5010	1	4702	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	58000	0	8580	3-68	1	4670	1	4680	120-158	-164	-178	-215	1	4652	1	4664	1	4684
	51603	0	8451	2-80	1	4521	1	4610	150-157	-168	-159	-174	1	4612	1	4620	1	4630
	51604	0	8636	0-58	1	5030	1	4703	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	51605	0	8668	0-58	1	4968	1	4700	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	51606	0	8662	0-56	1	5002	1	4700	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	51607	0	8602	4-00	1	4715	1	4692	150-167	-177	-207	-238	1	4680	1	4690	1	4699
	51608	0	8667	0-64	1	5005	1	4700	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
Kingston . . .	51609	0	8663	0-88	1	4995	1	4704	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63689	0	8441	2-92	1	4494	1	4610	130-153	-154	-158	-169	1	4595	1	4615	1	4622
	63690	0	8664	1-00	1	4998	1	4705	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63691	0	8486	2-72	1	4580	1	5630	140-157	-158	-159	-169	1	4610	1	4640	1	4648
	63692	0	8662	0-68	1	4970	1	4700	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	63693	0	8227	4-08	1	4412	1	4510	100-140	-153	-157	-163	1	4284	1	4502	1	4616
	70251	0	8635	0-60	1	5030	1	4708	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.
	70252	0	8675	0-56	1	5066	1	4710	1	25cc.	1	25cc.	1	25cc.	1	25cc.	1	25cc.

PART II—TURPENTINE ANALYSIS.

20° C. of Fractions Residues.		Volumes Obtained from 100cc.										Remarks and Opinion of the Chief Analyst.				
IV	Residual 10cc.	Residual 25cc.	Under 15° C.					15° to 16° C.					Residue on Evaporation.	Iodine Number.	Flash Point.	No. of Sample.
1 4614	1 4792	...	1	20	9	29	11	5	3	2	2	8	2789	Adulterated. See note on page 5.
1 4822	1 49+	5	10	38	17	6	3	2	1	1	7	...	...	2790	Adulterated. See note on page 5.
1 4748	1 49+	4	8	13	22	13	8	4	3	1	14	...	...	2791	Adulterated. See note on page 5.
1 4802	1 49+	4	13	42	14	6	2	1	1	1	6	...	...	2797	Adulterated. See note on page 5.
1 4718	1 4968	3	10	62	11	4	...	...	...	...	...	...	...	69124	...
1 4760	1 49+	...	5	12	12	8	9	9	9	6	29	...	...	69125	...
1 4708	1 4802	4	3	9	14	20	9	5	6	4	6	...	...	69126	...
1 4850	1 4720	5	29	50	4	1	1	...	...	...	...	...	...	69127	...
1 4712	1 4846	2	88	...	...	...	...	...	...	...	...	...	...	69128	...
1 4645	1 4820	1	12	41	16	9	3	2	2	1	3	...	...	69129	...
1 4640	1 4722	2	3	25	36	15	7	4	2	1	1	...	...	69130	...
1 4720	1 5115	3	8	55	15	5	3	1	...	...	...	...	...	69131	...
1 4645	1 4892	1	5	5	29	19	11	7	5	2	6	...	...	69132	...
1 4726	1 4930	1	1	1	15	15	10	11	9	3	24	...	...	69133	...
1 4718	1 4808	3	6	17	12	12	7	7	1	26	...	...	...	69134	...
1 4718	1 4852	3	3	9	20	11	7	5	3	29	...	...	...	69135	...
1 4830	1 5+	1	11	33	23	6	4	2	1	1	8	...	...	67459	Adulterated. See note on page 5.
1 4805	1 5+	2	9	47	13	5	3	3	1	1	6	...	...	67460	Adulterated. See note on page 5.
1 4812	1 5+	4	15	41	11	6	2	2	1	1	7	...	...	67461	Adulterated. See note on page 5.
1 4740	1 49+	...	3	65	8	6	2	1	2	1	2	...	...	67462	Adulterated. See note on page 5.
1 4692	1 4845	8	10	27	10	9	4	8	3	1	10	...	...	67463	Adulterated. See note on page 5.
1 4610	1 4672	4	73	7	5	1	...	...	...	...	...	...	...	67464	Adulterated. See note on page 5.
1 4710	1 49+	2	4	12	21	7	13	4	4	23	...	...	...	61697	Adulterated. See note on page 5.
1 4600	1 4665	2	63	27	6	2	...	...	...	...	...	...	...	63689	Adulterated. See note on page 5.
1 4625	1 4720	14	69	6	1	...	...	...	...	...	...	...	...	63690	Adulterated. See note on page 5.
1 4662	1 4760	41	26	27	2	...	...	...	...	...	...	...	...	63691	Adulterated. See note on page 5.
												70251	Adulterated. See note on page 5.			
												70252	Adulterated. See note on page 5.			

BULLETIN No. 331—TABLE I

RESULTS OF

Name of Inspectoral District.	No. of Sample.	S. Gr. at 20° C.	Boiling Point of Fractions from 100cc.												Refractive Index and			
			Residue 10cc. 40cc. Acid.			Ref. Index 20° C. Resi- due.			Ref. Index 20° C. Tur- pentine.			1st. 25cc.	2nd 25cc.	3rd 25cc.	Next. 1cc.	I	II	III
			Ref. Index	10cc.	40cc.	Ref. Index	10cc.	40cc.	Ref. Index	10cc.	40cc.							
Kingston—Con.	70253	0.8648	0.72	1.5024	1.4710	...	...	...	...	...	...	...	...	...	...	...	...
	70254	0.8726	0.48	1.5058	1.4714	...	...	...	...	...	...	...	...	...	...	...	...
	70255	0.8502	4.16	1.4722	1.4763	100—104	—173	—184	—243	1.4670	1.4675	1.4685	...	...	...	...	...
	70256	0.8682	1.08	1.4860	1.4715	130—154	—159	—167	—210	1.4700	1.4700	1.4710	...	...	...	...	...
	70257	0.8473	0.56	1.5062	1.4718	...	...	...	...	...	...	...	...	...	...	...	...
	70258	0.8635	0.64	1.5039	1.4700	...	...	...	...	...	...	...	...	...	...	...	...
	70259	0.8657	0.68	1.5060	1.4708	...	...	...	...	...	...	...	...	...	...	...	...
	70260	0.8649	0.14	1.5065	1.4716	...	...	...	...	...	...	...	...	...	...	...	...
Toronto.....	70074	0.8646	0.54	1.5018	1.4702	...	...	...	...	...	...	...	...	...	...	...	...
	70075	0.8665	0.72	1.5030	1.4720	...	...	...	...	...	...	...	...	...	...	...	...
	70076	0.8647	0.68	1.5042	1.4714	...	...	...	...	...	...	...	...	...	...	...	...
	70077	0.8539	2.00	1.4630	1.4660	140—157	—159	—161	—168	1.4620	1.4665	1.4682	...	...	...	...	...
	70078	0.8687	0.72	1.4895	1.4698	120—156	—156	—159	—174	1.4648	1.4684	1.4700	...	...	...	...	...
	70079	0.8453	3.20	1.4500	1.4624	130—159	—164	—179	—230	1.4612	1.4642	1.4644	...	...	...	...	...
	70080	0.8409	3.76	1.4480	1.4602	140—157	—163	—167	—189	1.4550	1.4610	1.4628	...	...	...	...	...
	70081	0.8653	0.68	1.4956	1.4702	...	...	...	...	...	...	...	...	...	...	...	...
	70082	0.8477	2.20	1.4521	1.4635	120—156	—158	—162	—172	1.4580	1.4652	1.4672	...	...	...	...	...
	70083	0.8497	1.92	1.4552	1.4644	140—157	—158	—161	—171	1.4600	1.4658	1.4678	...	...	...	...	...
Hamilton.....	70041	0.8682	0.44	1.4985	1.4720	...	...	...	...	...	...	...	...	...	...	...	...
	70042	0.8630	0.56	1.4995	1.4705	...	...	...	...	...	...	...	...	...	...	...	...
	70043	0.8422	4.00	1.4552	1.4606	130—138	—161	—169	—195	1.4550	1.4600	1.4622	...	...	...	...	...
	70044	0.8617	0.96	1.4825	1.4685	150—156	—156	—156	—161	1.4680	1.4675	1.4690	...	...	...	...	...
	70045	0.8649	0.72	1.4970	1.4704	...	...	...	...	...	...	...	...	...	...	...	...
	70046	0.8721	0.48	1.4975	1.4720	...	...	...	...	...	...	...	...	...	...	...	...
	70047	0.8600	0.56	1.4984	1.4710	...	...	...	...	...	...	...	...	...	...	...	...
	70048	0.8659	0.44	1.4998	1.4712	...	...	...	...	...	...	...	...	...	...	...	...
	70049	0.8734	0.40	1.4958	1.4720	...	...	...	...	...	...	...	...	...	...	...	...
	70050	0.8700	0.60	1.4970	1.4712	...	...	...	...	...	...	...	...	...	...	...	...
Windsor.....	54644	0.8639	0.68	1.5030	1.4694	...	...	...	...	...	...	...	...	...	...	...	...
	54646	0.8649	0.64	1.5030	1.4700	...	...	...	...	...	...	...	...	...	...	...	...
	54648	0.8640	0.68	1.5020	1.4608	...	...	...	...	...	...	...	...	...	...	...	...
	54650	0.8669	0.64	1.5015	1.4706	...	...	...	...	...	...	...	...	...	...	...	...
	54652	0.8648	0.64	1.5024	1.4694	...	...	...	...	...	...	...	...	...	...	...	...
	54654	0.8632	0.60	1.5030	1.4692	...	...	...	...	...	...	...	...	...	...	...	...
	54657	0.8666	0.56	1.5048	1.4705	...	...	...	...	...	...	...	...	...	...	...	...
	54659	0.8666	0.68	1.5018	1.4712	...	...	...	...	...	...	...	...	...	...	...	...
	54662	0.8661	0.64	1.5048	1.4694	...	...	...	...	...	...	...	...	...	...	...	...
	54664	0.8690	0.64	1.5018	1.4710	...	...	...	...	...	...	...	...	...	...	...	...
	54666	0.8662	0.56	1.5040	1.4710	...	...	...	...	...	...	...	...	...	...	...	...
	54670	0.8665	0.60	1.5042	1.4705	...	...	...	...	...	...	...	...	...	...	...	...
		Sp.gr. at 15°. 6° C.												Initial Boiling Point.				
Manitoba.....	61325	0.8592	2.00	1.4780	1.4670	...	...	...	...	...	...	...	...	150°			
	61326	0.8685	0.72	1.5155	1.4708	...	...	...	...	...	...	...	...	150°			
	61327	0.8687	0.72	1.5100	1.4703	...	...	...	...	...	...	...	...	149°			
	61329	0.8765	0.80	1.5104	1.4715	...	...	...	...	...	...	...	...	151°			
	61331	0.8619	1.04	1.4875	1.4672	...	...	...	...	...	...	...	...	149°			
	61333	0.8703	0.64	1.5090	1.4708	...	...	...	...	...	...	...	...	153			
	61334	0.8595	1.68	1.4820	1.4672	...	...	...	...	...	...	...	...	149			
	61338	0.8698	0.56	1.5050	1.4709	...	...	...	...	...	...	...	...	148			
	61339	0.8684	0.64	1.5060	1.4702	...	...	...	...	...	...	...	...	153°			
	61340	0.8647	1.60	1.4820	1.4678	...	...	...	...	...	...	...	...	150°			
Saskatchewan.....	66394	0.8743	0.48	1.5030	1.4705	...	...	...	...	...	...	...	...	150°			
	66395	0.8612	1.36	1.5000	1.4673	...	...	...	...	...	...	...	...	150°			
	66396	0.8692	0.80	1.5038	1.4703	...	...	...	...	...	...	...	...	152			
	66398	0.8694	0.48	1.5060	1.4706	...	...	...	...	...	...	...	...	149°			
	66400	0.8698	0.72	1.5068	1.4708	...	...	...	...	...	...	...	...	150°			

PART II—TURPENTINE

ANALYSIS.

BULLETIN No. 331—TABLE I

RESULTS OF

Name of Inspector District.	No. of Sample.	Sp. Gr. at 15° C.	Residue 10 cc. cc. acid.	Ref. Index 20° C. Resi- due.	Ref. Index 20° C. Tur- pentine.	Boiling Point of Fractions from 100cc.			Refractive Index and		
						1st, 25cc.	2nd, 25cc.	3rd, 25cc.	I	II	III
						Initial Boiling Point.			Next, 15cc.		
Saskatchewan — Con.	66402	0.8685	0.52	1.5020	1.4700	152°	152°	152°	1.4648	1.4660	1.4669
	66410	0.8681	0.48	1.5022	1.4701	149°	149°	149°	1.4689	1.4692	1.4702
	66412	0.8684	0.64	1.5094	1.4699	152°	152°	152°	1.4648	1.4653	1.4666
	66416	0.8696	0.48	1.5020	1.4708	152°	152°	152°	1.4682	1.4690	1.4700
	66418	0.8691	0.56	1.5100	1.4710	149°	149°	149°	1.4668	1.4689	1.4695
		Sp.gr. at 20° C.									
Alberta	52246	0.8599	1.60	1.4518	1.4671	152—160	163	171	1.4648	1.4660	1.4669
	52247	0.8632	0.32	1.5005	1.4711	156—158	159	160	1.4658	1.4669	1.4672
	52248	0.8548	1.70	1.4540	1.4665	152—157	161	167	1.4648	1.4660	1.4666
	52249	0.8652	0.36	1.4950	1.4710	154—157	158	160	1.4648	1.4653	1.4703
	52250	0.8652	0.36	1.4891	1.4708	155—158	160	163	1.4682	1.4690	1.4700
	52251	0.8658	0.36	1.4970	1.4700	152—156	156	158	1.4668	1.4689	1.4695
	52252	0.8733	0.56	1.4701	1.4711	152—157	160	166	1.4666	1.4681	1.4690
	52253	0.8624	0.48	1.4792	1.4700	154—157	158	160	1.4683	1.4689	1.4699
	52254	0.8669	0.32	1.5040	1.4711	154—157	158	159	1.4690	1.4694	1.4701
	52255	0.8545	1.60	1.4501	1.4663	155—162	161	170	1.4649	1.4661	1.4663
Rocky Moun- tains	61847	0.8684	0.48	1.5048	1.4708	153—157	158	160	1.4684	1.4691	1.4700
	61854	0.8648	0.72	1.5092	1.4711	154—158	159	160	1.4693	1.4700	1.4709
	61866	0.8654	0.40	1.5023	1.4719	154—157	158	159	1.4699	1.4706	1.4710
	61867	0.8681	0.48	1.5048	1.4710	153—157	158	160	1.4686	1.4696	1.4698
	61872	0.8004	6.83	1.4246	1.4420	100—133	152	169	1.4208	1.4305	1.4451
	61875	0.8580	2.32	1.4498	1.4661	154—160	164	169	1.4639	1.4656	1.4661
	61876	0.8695	0.36	1.5080	1.4709	153—158	159	160	1.4681	1.4691	1.4700
	61882	0.7977	7.84	1.4315	1.4411	145—157	167	179	1.4371	1.4402	1.4447
	61883	0.8682	0.52	1.4649	1.4700	150—156	158	162	1.4629	1.4680	1.4699
	61886	0.8780	0.32	1.4987	1.4729	153—160	163	167	1.4680	1.4697	1.4706
	55248	0.8676	0.24	1.5030	1.4710	152—156	157	159	1.4687	1.4698	1.4701
	55349	0.8542	1.68	1.4543	1.4667	153—159	161	166	1.4651	1.4661	1.4670
	55350	0.8643	0.84	1.4568	1.4690	150—156	160	164	1.4630	1.4676	1.4689
	55351	0.8567	0.76	1.4559	1.4660	147—153	157	159	1.4579	1.4659	1.4679
	55352	0.8667	0.30	1.4903	1.4703	153—159	160	162	1.4669	1.4690	1.4699
	55353	0.8284	5.48	1.4464	1.4543	147—163	172	191	1.4453	1.4521	1.4562
	55354	0.8651	0.24	1.5039	1.4700	154—157	157	161	1.4684	1.4688	1.4691
	55355	0.8668	0.54	1.4716	1.4695	148—156	156	160	1.4620	1.4680	1.4699
	55356	0.8340	7.00	1.4491	1.4581	147—169	184	205	1.4442	1.4519	1.4582
	55357	0.8713	0.50	1.4722	1.4702	150—159	162	168	1.4631	1.4680	1.4700
Victoria	66790	0.8662	0.36	1.5002	1.4710	152—157	157	159	1.4687	1.4697	1.4702
	66792	0.8700	0.36	1.5062	1.4711	154—157	158	159	1.4689	1.4698	1.4701
	66793	0.8573	1.84	1.4649	1.4681	154—161	164	167	1.4658	1.4668	1.4679
	66795	0.8503	2.30	1.4480	1.4648	155—159	162	169	1.4638	1.4649	1.4653
	66797	0.8651	0.52	1.5040	1.4710	154—158	160	161	1.4671	1.4690	1.4700
	66799	0.8775	0.36	1.5008	1.4719	149—156	157	162	1.4684	1.4692	1.4699
	66801	0.8639	0.36	1.5021	1.4704	154—157	157	158	1.4690	1.4697	1.4703
	66803	0.8461	3.24	1.4523	1.4630	153—160	160	172	1.4612	1.4633	1.4640

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Index
and
III
PART II—TURPENTINE.
ANALYSIS.

20 C. of Fractions Residues.			Volumes Obtained from 100cc.										Residue on Evaporation.			Remarks and Opinion of the Chief Analyst.																									
IV	Residual 10cc.	Residual 20cc.	Under 150° C.			150° to 154°			155° to 159°			160° to 164°			165° to 169°			170° to 174°			175° to 179°			180° to 184°			185° to 189°			190° and over.			Iodine Number.			Flash Point.			No. of Sample.		
			Under 150°	150° to 154°	155° to 159°	160° to 164°	165° to 169°	170° to 174°	175° to 179°	180° to 184°	185° to 189°	190° and over.	1.53	348.6	329.4	348.2	346.7	338.6	348.6	329.4	348.2	346.7	338.6	348.6	329.4	348.2	346.7	338.6	348.6	329.4	348.2	346.7	338.6	348.6	329.4	348.2	346.7	338.6			
4669	1.4670	1.4969	1.18	39.14	7	4	3	1	3	312.2	35.5	52246	Adulterated. See note on page 5.																												
4702	1.4719	1.4919	64	24	2					378.2	32.5	52247																													
4666	1.4662	1.4786	1.38	28	13	5	3	1	1	314.7	35.5	52248	Adulterated. See note on page 5.																												
4703	1.4717	1.4880	68	22					377.0	33.0	52249																														
4700	1.4720	1.4989	47	33	6	3	1		373.1	32.5	52250																														
4695	1.4709	1.4893	2.79	9					373.1	31.5	52251																														
4690	1.4721	1.5041	2.37	28	15	4	2	2	342.6	33.0	52252																														
4699	1.4708	1.4788	71	19					371.8	31.5	52253																														
4701	1.4713	1.4879	77	13					375.7	34.0	52254																														
4669	1.4668	1.4797	16	43	14	7	4	3	3	315.9		52255	Adulterated. See note on page 5.																												
4700	1.4712	1.4960	1.69	17	3				387.1	33.5	61847																														
4709	1.4718	1.4839	65	25					388.6	34.5	61854																														
4710	1.4722	1.4903	83	7					387.1	34.5	61366																														
4698	1.4715	1.4894	1.68	21					376.0	33.5	61867																														
4451	1.4650	1.4880	47	8	8	7	5	5	4	3	3	60.3	5.0	61872	Adulterated. See note on page 5.																										
4661	1.4653	1.4810	17	40	18	7	4	2	1	1	291.8	35.5	61875																												
4700	1.4714	1.4945	1.49	35	5					380.7	32.5	61876																													
4447	1.4509	1.4625	3.10	18	12	11	9	6	5	5	9.5	32.0	61882																												
4699	1.4721	1.5001	10	48	25	7				345.7	29.0	61883																													
4706	1.4732	1.5090	1	45	16	5	3	1	1	364.9	33.0	61886																													
4701	1.4719	1.4910	2.76	12					387.1	33.0	53348																														
4670	1.4668	1.4721	1.24	45	11	6	2	1		320.4	34.5	53349																													
4689	1.4702	1.4981	8.37	29	9	3	2	2		336.2	30.5	53350																													
4679	1.4697	1.4857	8	21	44	7				345.7	29.5	53351																													
4699	1.4712	1.4838	1.19	65	5					374.4	32.0	53352																													
4562	1.4602	1.4720	2	4	9	13	14	13	9	5	4	17	133.2	34.0	55353	Adulterated. See note on page 5.																									
4691	1.4706	1.4827	84	6						383.9	34.0	55354																													
4699	1.4721	1.5024	3.10	56	14	4	3			345.7	29.0	55355																													
4582	1.4639	1.4788	4	5	6	6	6	7	7	8	8	33	53	9	32.0	55356	Adulterated. See note on page 5.																								
4700	1.4724	1.5031	6.14	49	11	5	3	2		344.3	30.5	55357																													
4702	1.4718	1.4911	3.72	15						364.9	33.0	66790																													
4701	1.4712	1.4897	78	12						374.4	34.0	66792																													
4679	1.4672	1.4778	6	49	25	6	3	1		325.2	35.5	66793																													
4663	1.4642	1.4695	25	37	13	9	3	3		287.1	35.5	66795	Adulterated. See note on page 5.																												
4700	1.4713	1.4900	39	46	5					376.0	34.0	66797																													
4699	1.4736	1.5096	2.10	58	10	4	3	2	1	350.5	31.0	66799																													
4703	1.4712	1.4822	85	5						388.6	33.5	66601																													
4640	1.4628	1.4662	1.10	50	9	9	5	4	2	269.7	35.5	66603	Adulterated. See note on page 5.																												